

REMARKS

I. The Pending Claims and the Amendments to the Claims

The pending claims remain as Claims 15-36, with Claims 15 and 35 being the only pending independent claims, and claims 16-34 and 36 being the pending dependent claims. Independent Claim 15 is directed to a multilayer biaxially oriented film, and independent Claim 35 is directed to a process for making a biaxially oriented film.

Line 4 of Claim 15 is amended to delete a typographical error in the punctuation. In line 2 of Claim 15, the word “a” has been deleted from the Markush group of the first outer layer, to improve the readability of the claim and to conform Claim 15 to paragraph 59. In line 8 of Claim 15, the word “an” has been deleted from the Markush group of the first core layer, to improve the readability of the claim and to conform Claim 15 to paragraph 44.

Line 2 of Claim 35 is amended by adding the term “multilayer” to the preamble in order to provide antecedent basis for this term as it appears later in Claim 35. In line 3 of Claim 35, the words “the film” have been canceled to improve the readability of the claim, as it is apparent that it is *resin* that is extruded to form the film, as disclosed in Paragraph 0104. In line 6, the word “a” has been deleted from the Markush group of the first outer layer, to improve the readability of the claim and to conform Claim 35 to paragraph 59. Claim 35 has been further amended by moving the recitation of the modulus of the multilayer film and the recitation of the core layer negative proviso of the multilayer film to the end of the claim, in order to make clear that this language recites the modulus of the multilayer film after orientation. Support for this amendment can be found in the specification at, for example,

Paragraph 15, which discloses a multilayer biaxially oriented film having the recited modulus of at least 6,000 kg/cm². Finally, in line 11 of Claim 35, the word “an” has been deleted from the Markush group of the first core layer, to improve the readability of the claim and to conform Claim 35 to paragraph 44.

In summary, the amendments to the claims are of a formal nature, and are supported by the specification. The amendments include no new matter.

II. Applicant's Claimed Invention

Independent Claims 15 is directed to a multilayer biaxially oriented film, and independent Claim 35 is directed to a process for making biaxially oriented, thermoplastic film. Each of the independent claims recites the film as comprising:

- (i) a first outer layer comprising at least one member selected from the group consisting of polyester homopolymer and polyester copolymer;
- (ii) a second outer layer comprising at least one member selected from the group consisting of ethylene homopolymer, ethylene copolymer, propylene homopolymer, and propylene copolymer; and
- (iii) a first core layer comprising ethylene/vinyl alcohol copolymer.

**III. The §102(b) Rejection of Claims 15-18
and 27-28 as Anticipated by Murata et al**

Applicant contends that Murata et al does not anticipate any one or more of Claims 15-18 and 27-28. As to the basis for this contention, one must compare Applicants' claimed invention with the disclosure of Murata et al taken as a whole.

Applicants' independent Claims 15 and 35 each recite a biaxially oriented film comprising the following layer arrangement*:

First outer layer	First core layer	Second Outer Layer
polyester homo- and/or co-polymer	EVOH	Ethylene and/or propylene homo- and/or co-polymer

* with the proviso that the multilayer film does not have a core layer containing at least 50 weight percent, based on layer weight, of at least one member selected from the group consisting of polyamide and polyester.

Whether Murata et al anticipates any one or more of Applicants' claims is determined by comparing the disclosure of Murata et al, as a whole, with Applicant's claims. Columns 12 and 13 of Murata et al disclose various multilayer structures, each of which utilizes a special polyester, i.e., an "aluminum atom- and monocarboxylic acid residue-containing polyester". See Abstract of Murata et al.

Column 12 of Murata et al discloses multilayer constructions that have been labeled Structure Nos. 1, 2, 3, and 4 in Table I, below. In Structure Nos. 1-4, the special polyester is present in an internal adhesive layer (i.e., tie layer) of the multilayer construction. Column 13 of Murata et al discloses multilayer constructions that have been designated as Structure Nos. 5, 6, 7, 8, 9, 10, 11, and 12 in the table below. In Structure Nos. 5-12, the special polyester is used as a base layer of the laminate. Table I, below, summarizes the various multilayer

constructions of Columns 12 and 13 of Murata et al. Below Table I is information showing the identity of the polymer(s) present in each of the layers of the multilayer constructions of Murata et al.

Table I
The 12 Multilayer Structures of Columns 12 and 13 of Murata et al

Structure No.	Location in Murata et al	Multilayer film structure
1	Col. 12 line 46	(B) / (A) / (C)
2*	Col 12 line 50	(B) / (A) / (C) / (D)
3	Col 12 line 52	(B) / (A) / (C) / (A) / (E)
4*	Col 12 line 54	(B) / (A) / (C) / (A) / (E) / (D)
5	Col 13 line 56	(F) / (G)
6	Col 13 line 56	(F) / (G) / (H)
7	Col 13 line 58	(G) / (F) / (I)
8	Col 13 line 59	(I) / (F) / (G) / (H)
9	Col 13 line 60	(F) / (G) / (H) / (G) / (F)
10	Col 13 line 60	(G) / (F) / (I) / (F) / (G)
11	Col 14 lines 1-2	Special polyester / carboxyl-cont'g polymer / EVOH
12	Col 14 lines 3-5	Special / carboxyl- / EVOH / carboxyl- / special polyester cont'g polymer cont'g polymer polyester

(A) = special polyester tie

(B) = adherend = (i) hydroxyl containing polymer, (e.g., EVOH, vinyl alcohol homo- and co-polymers; cellulose); and

(ii) polyesters; and

(iii) carboxyl-containing polymer (e.g., maleic anhydride modified polyethylene, maleic anhydride modified EVA, ethylene-acrylic acid copolymer, other olefinic polymers each containing pendent carboxyl groups or anhydride rings); and

(iv) various metals

(C) = adherend = same as or different from B

(D) = different from that of C (e.g., polyethylene, polypropylene, polyvinylidene chloride, nylon)

(E) = same as or different from (B) and/or (C)

(F) = special polyester base polymer

(G) = carboxyl-containing polymer

(H) = same as or different from (F)

(I) = same as or different from (G)

In assessing novelty, each of Structure Nos. 1-12 is compared with Applicants' invention as claimed in independent claims 15 and 35. Table II, below, provides both a schematic summary of the multilayer arrangement of Applicant's invention as recited in independent Claims 15 and 35, as well as a compilation of the layers disclosed in Murata et al that may contain one or more polymers that correspond with the polymers in the layers of Applicant's invention.

Table II
Multilayer Arrangement of Applicant's Claims 15 and 35, and
Corresponding Polymers in Murata et al

Applicant's Claims 15 and 35			
Corresponding Polymers in Murata			
	Polyester homo- or co-polymer	EVOH	ethylene homopolymer ethylene copolymer propylene homopolymer propylene copolymer
	A, B, F, or H	B, C, or E	D

The condensed summaries in Table II make it relatively easy to assess novelty by comparing each of Murata et al Film Nos. 1-12 with Applicant's independent claims 15 and 35, as is set forth in Table III, below.

Table III
Novelty Comparison of Murata et al with Applicant's Claims 15 and 35

Structure No.	Multilayer Constructions of Murata et al	Is the Film of Applicant's Claims 15 and 35 Novel over Murata et al?
1	(B) / (A) / (C)	YES (1) no EVOH core (2) no outer PE or PP layer
2	(B) / (A) / (C) / (D)	NO, BUT ONLY IF: <i>(a) B is polyester (1 in 4)</i> <i>(b) C is EVOH (1 in 4 x 1 in 3)</i> <i>(c) D is PE or PP (2 in 4)</i> -and the additional claim requirements are met
3	(B) / (A) / (C) / (A) / (E)	YES (3) no outer PE or PP layer
4	(B) / (A) / (C) / (A) / (E) / (D)	NO, BUT ONLY IF: <i>(a) B is polyester (1 in 4)</i> <i>(b) C is EVOH (1 in 4)x(1 in 3)</i> <i>(c) D is PE or PP (2 in 4)</i> -and the additional claim requirements are met
5	(F) / (G)	YES (1) no EVOH core (2) no outer PE or PP layer
6	(F) / (G) / (H)	YES (1) no EVOH core (2) no outer PE or PP layer
7	(G) / (F) / (I)	YES (1) no EVOH core (2) no outer PE or PP layer (3) no outer polyester homo- or Co-polymer
8	(I) / (F) / (G) / (H)	YES (1) no EVOH core (2) no outer PE or PP layer

9	(F) / (G) / (H) / (G) / (F)	<u>YES</u> (1) no EVOH core (2) no outer PE or PP layer
10	(G) / (F) / (I) / (F) / (G)	<u>YES</u> (1) no EVOH core (2) no outer PE or PP layer (3) no outer polyester homo- or co-polymer
11	Spcl polyester / carboxyl-cont'g polymer / EVOH	<u>YES</u> (2) no outer PE or PP layer
12	Spcl / carboxyl- / EVOH / carboxyl- / spcl p-ester cont'g polymer cont'g polymer polyester	<u>YES</u> (2) no outer PE or PP layer

As can be seen in Table III above, only 2 of the 12 multilayer constructions of Murata et al encompass a combination of layers that corresponds with the combination of layers recited in Applicant's independent Claims 15 and 35. That is, Applicant's Claims 15-18, 27, and 28 are novel over Structure Nos. 1, 3, and 5-12, because the layer constructions of Structure Nos. 1, 3, and 5-12 do not correspond with Applicant's independent Claim 15. The novelty analysis in the far right column of Table III indicates why each of Structure Nos. 1, 3, and 5-12 do not correspond with Applicant's independent Claim 15.

As for Structure Nos. 2 and 4, at the outset it should be noted that considering Murata et al as a whole, there is only a 2 in 12 chance of selecting Structure No. 2 or Structure No. 4 from Structure Nos. 1-12. It is improper to select portions of Murata et al in isolation, without considering Murata et al as a whole, because one of skill in the art would have had no such guidance to select from the whole of Murata et al at the time of Applicant's invention.

Moreover, even if one does happen to select either Structure No. 2 or Structure No. 4, the multilayer construction has no chance of corresponding with Applicant's independent Claims 15 and 35 unless particular polymer selections are made for each of the layers. More particularly, "polyester" would have to be selected for the B polymer. This is a one-in-four chance, as is apparent from the "B = adherend = (i)... or (ii)... or (iii)... or (iv) set forth below Table I above.

Likewise, "EVOH" would have to be selected for the C polymer. This would be a one-in-twelve chance, because EVOH is a one-in-four selection within groups (i) or (ii) or (iii) or (iv) beneath Table I, and EVOH is a one-in-three chance of being selected from the group of "EVOH, vinyl alcohol homo- and co-polymers, and cellulose".

Still further, "polyethylene" or "polypropylene" would have to be selected for the D polymer. This is a two-in-four chance, as is apparent from the D grouping of "polyethylene, polypropylene, vinylidene chloride, and nylon" below Table I.

In addition, Applicant's independent Claims 15 and 35 each require biaxial orientation. Murata et al discloses both biaxial orientation (Col. 14, line 20), as well as monoaxial orientation (Examples 17 and 19). As such, one would have to select biaxial orientation from the two disclosed options, which is a one-in-two chance.

In summary of the above discussion, the odds of one of skill in the art reviewing Murata et al and arriving at Applicant's claimed invention are only one in 1152. This is calculated by:

- (a) 2-in-12 chance of selecting Construction Nos. 2 or 4 from Construction Nos. 1-12;
- (b) 1-in-4 chance of selecting polyester for "B" ;

- (c) 1-in-4 chance of selecting “hydroxyl containing polymer” for “C”;
- (d) 1 in 3 chance of selecting “EVOH” from “EVOH, vinyl alcohol homo- and co-polymers, and cellulose;
- (e) 2 in 4 chance of selecting polyethylene or polypropylene for “D”; and
- (f) 1 in 2 chance of selecting biaxially oriented from biaxially oriented and monoaxially oriented.

Taking all of these odds in combination, the result is:
(2 in 12) x (1 in 4) x (1 in 4) x (1 in 3) x (2 in 4) x (1 in 2) = 4 in 4,608 = 1 in 1,152

Applicant contends that a generic disclosure that presents a 1-in-1152 chance of arriving at Applicant’s claimed invention is not anticipation of Applicant’s claimed invention. Applicant further contends that even if one disputes the 1-in-2 chance of biaxial orientation (because while Murata et al does disclose uniaxial orientation in Examples 17 and 19, it can be argued that Murata et al discloses a preference for biaxial orientation at Col. 14 line 20), the resulting 1-in-676 chance of arriving at the claimed invention is still not enough to be deemed to be anticipation of the claimed invention. Moreover, without some motivation directing one of skill in the art toward the 1-in-1152 (or 1-in-676) chance of arriving at Applicant’s invention, it is also apparent that Applicant’s invention as recited in all of Applicant’s claims (including Claims 29-31 which are rejected under §103(a) over Murata et al) is nonobvious over Murata et al.

As a result, Applicant contends that the Office Action does not establish that Murata et al anticipates any one or more of Claims 15-18, 27, and 28. Applicant further contends that for at least the same reasons, each of Claims 15-18, 27, 28, and 29-31 are also nonobvious over Murata et al.

Of course, the above analysis still does not take into consideration whether any of Multilayer Construction Nos. 1-12 exhibits Applicant's recited modulus of at least 6,000 kg/cm² in at least one direction.

In addition, it should be noted that while it may initially appear that the internal polyester layer in each of the Murata et al multilayer construction Nos. 1-4 violates the negative proviso in Applicant's claims, such is not the case because the negative proviso relates to "core layers". Applicant's specification states that the phrase "core layer" refers to any internal layer that preferably has a function *other than serving as an adhesive*. Since the internal A layers in multilayer Construction Nos. 1-4 of Murata et al are disclosed as being adhesive layers, they do not meet the core layer negative proviso in Applicant's independent Claims 15 and 35.

IV. The §103(a) Rejection of Claims 19-26 and 35-36 as Obvious over Murata et al in view of Murschall et al in view of Bassett et al

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The §103(a) Rejection of Claims 29-31 as Obvious over Murata et al

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The §103(a) Rejection of Claim 32 as Obvious over Murata et al in view of Laird et al

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The §103(a) Rejection of Claim 33 as Obvious over Murata et al in view of Laird et al

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The §103(a) Rejection of Claim 34 as Obvious over Murata et al in view of Banazak et al

Applicant contends no prima facie case of obviousness has been set forth for any one or more of pending claims 19-26 and 29-36. Applicant notes that each of the various rejections under §103(a) relies upon Murata et al for a disclosure of the layer arrangement

recited in independent Claim 15 (from which dependent claims 16-34 depend). Applicant further notes that this same layer arrangement is recited in independent Claim 35, from which Claim 36 depends.

The Office Action fails to set forth a prima facie case of obviousness of any one or more of Claims 19-26 and 29-36 for the same reasons set forth above in response to the §102(b) rejection of Claims 15-18. In other words, the Office Action fails to show that Murata et al discloses, teaches, or suggests the layer arrangement recited in Applicant's independent Claims 15 and 35. The broad generic teaching of thousands of possible films provides, at best, only a 1-in-1152 or 1-in-676 chance of arriving at Applicant's film of rejected claims 19-26, 29-34, or rejected process claims 35-36 which set forth the same film.

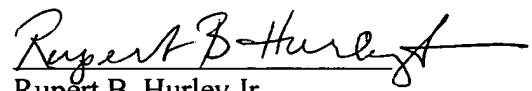
The various secondary references relied upon in the office action are not shown to make up for the deficiencies in the disclosure of Murata et al. Rather, Murschall et al, Bassett et al, Laird et al, and Banazak et al are relied on for various additional features recited in various dependent claims.

Based on all the reasons set forth above, no prima facie case of obviousness has been set forth for any one or more of pending Claims 19-26 and 29-36.

V. Conclusion

Applicant respectfully requests reconsideration of amended Claims 15-36, as amended hereinabove, with a view towards allowance, based on the amendments and remarks set forth above. Should there be any questions or comments, the Examiner is invited to contact the undersigned at the telephone number provided below.

Respectfully Submitted,



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October 29, 2008